

AMENDMENTS TO THE CLAIMS:

1. (Currently amended) A method for analyzing impurities present in a silicon substrate comprising the steps of:
 1. accommodating a silicon substrate resting on a support, and a solution for decomposing a silicon substrate which comprises a mixture of hydrofluoric acid, nitric acid and sulfuric acid, in a tightly sealed reaction vessel, in such a way as to keep the silicon substrate from directly contacting with the decomposition solution;
 2. allowing the decomposing solution to vaporize, thereby causing the substrate to decompose through vapor-phase reaction for sublimation and leaving a residue of the decomposed substrate, without requiring the reaction vessel to be heated or pressurized; and
 3. recovering the residue left by the decomposing substrate, to analyze the impurities contained in the substrate.
2. (Previously presented) A method according to claim 1 wherein the mixing ratio of hydrofluoric acid, nitric acid and sulfuric acid occurs at (0.38-1.5):(0.35-1.02):(0.98-2.94) by weight.
3. (Currently amended) A method according to claim 1 further comprising the steps of:
 1. adding an acid mixture of hydrochloric acid and nitric acid to the recovered decomposition residue;
 2. heating the yield the recovered decomposition residue with the acid mixture to 60-90°C, to allow the residue to sublime; and
 3. quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.
4. (Currently amended) A method according to claim 1 further comprising the steps of:
 1. adding an acid mixture of hydrofluoric acid and nitric acid to the recovered decomposition residue;
 2. heating the yield the recovered decomposition residue with the acid mixture to 150-220°C, to allow the residue to sublime; and
 3. quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.

5. (Original) A method according to claim 1 where the silicon substrate is a silicon wafer, the silicon wafer being inserted between two plates made of a fluorine resin having the same diameter which is a little smaller than that of the wafer, and the assembly being placed on the support.
6. (Currently amended) A method according to claim 5 further comprising the steps of:
 - adding an acid mixture of hydrochloric acid and nitric acid to the recovered decomposition residue;
 - heating the yield the recovered decomposition residue with the acid mixture to 60-90°C, to allow the residue to sublime; and
 - quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.
7. (Currently amended) A method according to Claim 5 further comprising the steps of:
 - adding an acid mixture of hydrofluoric acid and nitric acid to the recovered decomposition residue;
 - heating the yield the recovered decomposition residue with the acid mixture to 150-220°C, to allow the residue to sublime; and
 - quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.
8. (Currently amended) A method according to claim 1 wherein one or more fragments of a silicon substrate(s) is substrate are put into one, or in two or more beakers made of a fluorine resin, and the beakers are placed on the support.
9. (Currently amended) A method according to claim 8 further comprising the steps of:
 - adding an acid mixture of hydrochloric acid and nitric acid to the recovered decomposition residue;
 - heating the yield the recovered decomposition residue with the acid mixture to 60-90°C, to allow the residue to sublime; and
 - quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.
10. (Currently amended) A method according to claim 8 further comprising the steps of:

adding an acid mixture of hydrofluoric acid and nitric acid to the recovered decomposition residue;
heating the yield the recovered decomposition residue with the acid mixture to 150-220°C, to allow the residue to sublime; and quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.

11. (Cancelled)

12. (Cancelled)

13. (Currently amended) A method according to claim 2 further comprising the steps of:

adding an acid mixture of hydrochloric acid and nitric acid to the recovered decomposition residue;
heating the yield the recovered decomposition residue with the acid mixture to 60-90°C, to allow the residue to sublime; and quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.

14. (Currently amended) A method according to claim 2 further comprising the steps of:

adding an acid mixture of hydrofluoric acid and nitric acid to the recovered decomposition residue;
heating the yield the recovered decomposition residue with the acid mixture to 150-220°C, to allow the residue to sublime; and quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.

15. (Previously added) A method according to claim 2 wherein the silicon substrate is a silicon wafer, the silicon wafer being inserted between two plates made of a fluorine resin having the same diameter which is a little smaller than that of the wafer, and the assembly being placed on the support.

16. (Currently amended) A method according to claim 15 further comprising the steps of:

adding an acid mixture of hydrochloric acid and nitric acid to the recovered decomposition residue;
heating the yield the recovered decomposition residue with the acid mixture to 60-90°C, to allow the residue to sublime; and

quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.

17. (Currently amended) A method according to claim 15 further comprising the steps of:

adding an acid mixture of hydrofluoric acid and nitric acid to the recovered decomposition residue;
heating the yield the recovered decomposition residue with the acid mixture to 150-220°C, to allow the residue to sublimate; and quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.

18. (Currently amended) A method according to claim 2 wherein one or more fragments of a silicon substrate(s) is substrate are put in one, or in two or more beakers made of a fluorine resin, and the beakers are placed on the support.

19. (Currently amended) A method according to claim 18 further comprising the steps of:

adding a an acid mixture of hydrofluoric hydrochloric acid and nitric acid to the recovered decomposition residue;
heating the yield the recovered decomposition residue with the acid mixture to 60-90°C, to allow the residue to sublimate; and quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.

20. (Currently amended) A method according to claim 2 18 further comprising the steps of:

adding an acid mixture of hydrofluoric acid and nitric acid to the recovered decomposition residue;
heating the yield the recovered decomposition residue with the acid mixture to 150-220°C, to allow the residue to sublimate; and quantitatively analyzing the remnants by atomic absorption spectroscopy or by inductively coupled plasma mass spectroscopy.